

REMARKS

By the present amendment claims 1-3, 7, 13, 15, 16, 18 and 21 have been amended to clarify the invention as suggested by the Primary Examiner in an Interview conducted on September 22, 2004. Claims 5, 6, 8, 12, 17, 19 and 20 were previously canceled.

Claims 1-4, 7, 9-11, 13-16, 18 and 21 are thus pending in the application.

In the Office Action, the Examiner rejected claims 1-4, 7, 9, 11, 13-16, 18, and 21 under 35 U.S.C. §103(a) as being unpatentable over Mikoshiba (IDW 1996, pp. 251-254) in view of U.S. Patent Number 5,907,316 to Mikoshiba et al. (hereinafter Mikoshiba '316).

In view of the arguments that follow, Applicants respectfully traverse the Examiner's rejection of claims 1-4, 7, 9-11, 13-16, 18 and 21.

Rejection Under 35 U.S.C. § 102(b)

The Examiner rejected claims 1-4, 7, 9, 11, 13-16, 18 and 21 under 35 U.S.C. §103(a) as being unpatentable over Mikoshiba in view of Mikoshiba '316. The rejection is respectfully traversed.

With respect to claims 1, 2 and 7, the Examiner alleged that Mikoshiba discloses detecting a gray level shift from a focused pixel in a frame of a motion picture to an adjacent pixel in the frame, as a gray level information of the focused pixel, by referencing in Fig. 5 a pixel in the 128th level on the right as the focused pixel and pixel with the 127th level on the left as the adjacent pixel with gray level difference as the gray level shift. The Examiner further alleged that Mikoshiba discloses detecting a motion vector indicative of a

speed and direction of motion of a picture from the focused pixel to another pixel, as motion information of the focused pixel, by counting the number of pixels that experience the bit-variation and comparing the number of these pixels in the horizontal and vertical directions, and adding motion-dependent equalizing pulses to the pixels that experience the bit variation.

The Examiner admitted that Mikoshiba does not teach generating a correction gray level signal using logical formulae formulized for each motion picture pseudo contour generation pattern based on generation patterns classified according to respective gray level information of a focused pixel and adjacent pixel, and motion information. To cure the deficiencies of Mikoshiba, the Examiner alleged that Mikoshiba '316 teaches adding an equivalent pulse of additive or subtractive value (EPA or EPS) based on an emission block where contour defect occurs, by referencing Figs. 41A – 45, and col. 22, lines 9-62. The Examiner asserts that one of ordinary skill in the art would recognize that the equivalent pulse is determined methodically based on the gray level changes and also a direction of change as shown in the figures. According to the Examiner it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate an equivalent pulse determination method into a determination of equalizing pulses needed for a target and affected adjacent pixels as well, because the method serves effectively to minimize the dynamic pseudo contour. The Examiner further alleged that the determination of an equivalent pulse that varies with emission blocks used is read on the claimed logical formulae.

Applicants respectfully submit that neither Mikoshiba nor Mikoshiba '316, taken singly or in combination (assuming these teachings may be combined, which Applicants do not admit), disclose or teach the invention as recited in the claims. Specifically, with respect to independent claim 1, there is nothing in the references that disclose "classifying a plurality of motion picture pseudo contour correction patterns according to the respective gray level information of the focused pixel and adjacent pixel, and the motion information; and generating a correction gray level signal using one of a plurality of logical formulae, wherein each logical formula is formularized for each of said plurality of motion picture pseudo contour correction patterns," as recited.

Mikoshiba discloses a motion-dependent equalizing pulse technique, which adds positive and negative light emission to an original signal with gray-level disturbances of an image moving at a speed. However, there is nothing in the invention of Mikoshiba that discloses or teaches "classifying a plurality of motion picture pseudo contour correction patterns according to the respective gray level information of the focused pixel and adjacent pixel, and the motion information; and generating a correction gray level signal using one of a plurality of logical formulae, wherein each logical formula is formularized for each of said plurality of motion picture pseudo contour correction patterns." Mikoshiba '316 does not make up for the deficiencies of Mikoshiba.

Mikoshiba '316 merely discloses a method for displaying a halftone image on a display unit by using a frame division that divides each frame of a halftone image into subframes that provides a specific intensity level (see abstract). The sum of the intensity levels of enabled subframes of the frame can be viewed due to a persistence

characteristic of the human eye. When a display intensity level changes in a still image, a valley or peak in stimuli on a retina will occur in an image, which results in bright or dark lines appearing between intensity levels. A logic circuit determines an equivalent pulse that is a subframe or light emission block. The equivalent pulse is inserted in the intensity levels to relax the peak or valley in order to suppress or cancel the bright or dark lines, which prevents smears or false color contours on images.

The equivalent pulses in Mikoshiba '316 consist of subframes or light emission blocks that are checked by two equivalent pulse testers that are logic circuits. The first and second logic circuits determine the polarity of the equivalent pulses. The polarity consists of whether the equivalent pulses must be enabled or disabled to turn ON or OFF the intensity level adjusting subframes. However, the equivalent pulses are not determined based on correction patterns that are classified "according to the respective gray level information of the focused pixel and adjacent pixel, and the motion information." There is nothing in Mikoshiba '316 that determines an equivalent pulse to be inserted into intensity levels that is based on gray level information of the focused pixel and adjacent pixel such as individual magnitude of gray level turbulence and a range of pixels affected by the gray level turbulence. Moreover, the equivalent pulse determined in Mikoshiba '316 is not based on motion information such as motion speed of a picture. The equivalent pulses of Mikoshiba '316 is merely derived from input signals to the logic circuits which determines whether the equivalent pulses are enabled or disabled to turn ON or OFF intensity level adjusting frames based on a change in the signal levels.

In view of the reasons given above, Applicants respectfully submit that neither Mikoshiba nor Mikoshiba '316 disclose or teach the recitations of claim 1, and the rejection of claim 1 should be withdrawn. The rejection of dependent claims 2-4 should also be withdrawn for at least the same reasons given above with regard to respective claim 1.

Applicants respectfully submit that the rejection of independent claim 7, which recites "classifying a plurality of motion picture pseudo contour correction patterns in accordance with gray level information of a focused pixel of a picture in a certain field or a frame, gray level information of a pixel adjacent to the focused pixel in the same field or in the same frame, and picture motion information detected regarding the picture of the field or the frame; generating a motion picture pseudo contour correction-use signal according to one of a plurality of formulae, wherein each formula is formularized for each of said plurality of motion picture pseudo contour correction patterns," should be withdrawn for the same reasons given above with regard to independent claim 1. Applicants further submit that the rejection of dependent claims 9-11 and 14 should be withdrawn for at least the same reasons given for respective base claim 7.

Applicants also respectfully submit that the rejection of independent claim 13, which recites "generating the motion picture pseudo contour correction-use signal using one of a plurality of formulae, wherein each formula is formularized for each group of gray level shifts between the focused pixel and the adjacent pixel, in order to generate the motion picture pseudo contour correction-use signal using the same computation

with respect to gray level shifts of the same group,” should be withdrawn for the same reasons given above with regard to independent claim 1.

Applicants respectfully submit that the rejection of independent claim 15, which recites “a classification section for classifying a plurality of motion picture pseudo contour correction patterns according to the respective gray level information of the focused pixel and adjacent pixel, and the motion information; and a computing section for generating a correction gray level signal using one of a plurality of logical formulae, wherein each logical formula is formularized for each of said plurality of motion picture pseudo contour correction patterns,” should be withdrawn for the same reasons given above with regard to independent claim 1. Applicants also submit that the rejection of dependent claim 16 should be withdrawn for at least the same reasons given with regard to respective base claim 15.

Applicants also respectfully submit that the rejection of independent claim 18, which recites “a classification section for classifying a plurality of motion picture pseudo contour correction patterns according to the respective detected gray level information of the focused pixel and adjacent pixel, and the detected motion information; a correction-use signal generating section for generating a motion picture pseudo contour correction-use signal using one of a plurality of logical formulae, wherein each logical formula is formularized for each of said plurality of motion picture pseudo contour correction patterns,” should be withdrawn for the same reasons given with regard to independent claim 1.

Applicants further respectfully submit that the rejection of independent claim 21, which recites “a correction-use signal generating section for generating a motion picture

pseudo contour correction-use signal according to the respective detected gray level information of the focused pixel and adjacent pixel, and the detected motion information, gray level shifts between the focused pixel and the adjacent pixel being grouped, the correction-use signal generating section generating the motion picture pseudo contour correction-use signal in accordance with a plurality of formulae, wherein each formula is formularized for each group of the gray level shifts, in order to generate the motion picture pseudo contour correction-use signal using the same computation with respect to gray level shifts of the same group, " should be withdrawn for the same reasons given above with regard to independent claim 1.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of the pending claims. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Demetra R. Smith-Stewart (Reg. No. 47,354), to conduct an interview in an effort to expedite prosecution in connection with the present application.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH &, BIRCH, LLP

By: 

Terrell C. Birch, # 19,382


TCB/DSS/jeb
1248-0516P

P.O. Box 747
Falls Church, VA 22040-0747
703-205-8000